

OPINION OF AN EXPERT.

The \$300,000 Gravity Sewer Plan Exhaustively Treated.

THE PROJECT APPROVED.

Mr. Croes Thinks the Present System Inadequate and Expensive.

The Sewage Will Be of Great Value for the Irrigation of Land—Various Plans Considered, but the Gravity Is the Best.

At last evening's session of the city council, J. B. Croes, the expert engineer employed to examine and report on the \$300,000 gravity sewer plan proposed by City Engineer Doremus, submitted his report.

After a minute description of the topography of the valley, Mr. Croes says: "The streets of the city are laid out at an angle of about forty-five degrees with the line of the base of the plateau, so that the surface drainage of all the territory above the bottom lands bordering on the river, is toward the south and west, while the ultimate disposal of the drainage water of all kinds, must be to the northward, in accordance with the slope of the river and the valley."

"It has been recognized by all those who have given the matter any attention, that the discharge of the sewage directly into the Jordan river, along the city front, could not be permitted. To discharge it into an intercepting sewer parallel to, and above the river, with its outlet far enough below the city to avoid creating a nuisance, is impracticable, in consequence of the low elevation of the land adjoining the river and the want of sufficient slope to carry off the sewage in a pipe or sewer of practicable size."

THE PRESENT SYSTEM.

"In the system adopted, and now partially constructed and in operation, the sewage is all discharged directly into the Jordan river, from the highest street, which runs through from the mountains to the river, and is then conveyed through Fifth South street for two miles, to a well near the river, bank, from which it is pumped during twelve hours of the day through a twelve-inch pipe two miles long and discharged into a canal, built to relieve the Jordan during excessive freshets, and is carried off in that canal to be discharged into Salt Lake."

EXPENSIVE AND INADEQUATE.

"This method of disposal proves to be expensive, and the pumping plant which has been put in is already very much small for the work required. Sixty per cent. of the sewage which is now delivered at the pump well is lost, and is allowed to flow directly into the river, and to pump the remaining forty per cent. over into the surplus canal costs \$5,000 per annum. The sewage which flows to the pump station is delivered from a distance of a half mile of sewers, affording drainage to 400 acres of property, out of the 3000 acres which are more or less occupied by dwellings and business houses above the low lands adjoining the river; and which ought to be all provided with sewer facilities at as early a date as practicable."

THE LOW AREA.

In making provision at this time for disposing of the sewage from this section of the city, there ought also to be included an additional area which is rapidly becoming occupied by residences, to the southeast of the city hall and above the elevation on which it is situated, as nearly as can be estimated, the habitable area, more than thirty feet above the river, for which sewerage facilities and disposal ought to be provided, is 3,800 acres. There is also an area of about 2,500 acres east of the Jordan river, for which sewage must some day be provided, and another area of 2,500 acres west of the river which will need sewerage. Both of these areas lie so low that there is no possibility of disposing of the sewage except by pumping. The sewage from the 3,800 acres lying on the higher levels can, however, be disposed of by gravity without pumping or other means requiring constant skilled labor, and the question for us to consider is whether the cost of such disposal would be greater or less than the apparently simpler mode of letting the sewage flow down to the lower level and pumping it to some distant outlet, such as the surplus canal, or rendering it inoffensive and discharging it into the Jordan river."

VALUE OF THE SEWAGE.

In considering these alternative plans for disposing of the sewage, the market value of the effluent is very important. In the climate of Utah, water is the one commodity which makes land not only productive, but simply habitable, and is first thought which occurs to one on viewing the present method of sewage disposal in Salt Lake city, is that the city is expending annually a large sum to throw away and render absolutely valueless, a sufficient quantity of water to render productive more than 3,000 acres of farm land, and the too, we are not a superior quality for irrigation purposes for any that could be procured from natural sources in the mountains, being not only enriched by domestic wastes, but raised in temperature."

In other climates, where water is plentiful, and the land needs no other fertilizers to make it productive, many efforts have been made to utilize the solid products of city sewage and permit the water to flow to waste after having been rendered innocuous. None of the efforts have proven sufficiently remunerative to warrant their adoption, except as a sanitary necessity, and it would be folly to attempt them here where the conditions which call for their trial do not exist."

THE QUESTION OF DISPOSITION.

The first point to which my attention was turned was, therefore, the existence of a locality to which the sewage water could be diverted with the greatest benefit and at the least expenditure, and the entire territory to the west and north of the city was examined with that view.

Along the western front of the city, between the base of the hill and the surplus canal, a distance of three to five miles, the ground lies so low that the sewage from the hill cannot be distributed over the surface without being carried at least three miles in iron pipes under a head, and then either pumped from sumps or allowed to rise to above the surface. In the latter case the conduits would be inverted siphons in which the flow would be fluctuating and irregular, and they would be certainly frequently clogged by the deposits from the sewage, whether pumped or siphoned. There would be needed not less than three such conduits, five miles long, each capable of carrying off sewage at the rate of 10,000,000 gallons in twenty-four hours, and the pumping there would further have to be not less than three sumps and pumping plants, capable of pumping about 600,000 gallons an hour to the height of twenty feet. The annual cost of operating this pumping plant would not be less than \$30,000 per annum, equivalent to the interest on a capital of \$300,000. This is exclusive of the cost of the plant.

The present pumping plant, owing to the insufficient size of the force main, does a duty equivalent to pumping 50,000 gallons an hour under a head of forty feet.

The territory on which this sewage would have to be distributed for irrigation is now supplied with water by gravity from the upper waters of the Jordan.

THE CITY ENGINEER'S PROJECT.

This whole scheme appeared so unwieldy, complicated and expensive that attention was turned to the project recommended by the city engineer, for conveying the sewage of the plateau by gravity to a tract of land lying four miles north of the city, for which there is apparently no supply of water available from mountain streams. The water from the Jordan range to the eastward being already utilized

ized on lands directly at the base of the mountain.

The very thorough surveys made by the city engineer, show that it will be practicable to intercept all the sewage flowing from the city, above a plane thirty feet above the Jordan and convey it by a conduit to a total length of seven miles to the surface of the tract above mentioned, which lies between the foot-hills and the Jordan, has a soil suitable for immediate production of crops if moisture is supplied, and extends with a gentle slope several miles to the northward.

THE MOST FEASIBLE PLAN.

I have carefully examined the line and profile proposed for this conduit by the city engineer, and am of the opinion that the construction presents the most feasible and economical method of disposing of the present and future sewage of so much of Salt Lake city as lies above a line beginning at Liberty park on the south and curving around past the new City Hall, the Union Pacific railway depot, and the Deseret University to near the Warm Springs bath house.

The method of construction proposed by the city engineer, partly of concrete and partly of brick, appears to me to be well devised and economical. In form and dimensions, I recommend that the conduit be circular inside and of 42 inches diameter, and on a grade of one foot in 2000 feet, from the corner of Fifth South and First East streets to the corner of Second South and Second West streets, thence of 48 inches diameter on a grade of one foot in 2000 feet, to the intersection of Fourth West and North Temple streets, and thence of 60 inches diameter on a grade of one foot in 2,500 feet for about 27,000 feet, to the terminus in section twelve at an elevation of about 4238.8 feet above the sea.

The estimates of costs prepared by the city engineer, appear to be liberal, and so far as I have been able to judge, the cost of this character of work in this locality, I have no hesitation in saying that I believe that the whole proposed plan can be executed within the estimates.

THE PUMP PLANT.

As regards the existing pumping plant, while it is entirely insufficient for the present and future needs of the city, there does not appear to be any immediate necessity for its enlargement, if the proposed gravity intercepting sewer is constructed at once. It will then be available for the disposal of the sewage from the bottom lands north and south of Fifth South street. When the amount of sewage from this district shall exceed the capacity of the plant, an outfall main will be necessary, and it would be advisable to lay that up to the gravity sewer and pump into that sewer, which will be necessary, and it will be of use to anyone and would be a nuisance to the adjacent lands, which are now being cultivated, while at the present disposal grounds, it would be available for irrigation, and even if not needed, could be discharged into the river at a point where no objections are likely to be built for a great many years.

If, as the experience of other cities would indicate as likely, the enriched and tempered water supplied from the sewer comes into great demand, it will be practicable to increase the normal flow in the sewer by diverting into it some of the surplus waters from City creek and the irrigation canals of the city, which are now permitted to run to waste to the Jordan. Such a disposition of this water which would be made, pending the time that the population has increased to such an extent as to render the full capacity of the sewer needed for disposal of the sewage proper.

A PNEUMATIC SYSTEM.

For the bottom lands north of Third South street, an additional pumping plant will be needed in a few years, and the sewage should be pumped into the gravity sewer at, or near, the Warm Springs. This whole district is so flat, that it will probably be found advantageous to use some of the pneumatic systems, which have proved effective in flat districts, and in which the sewage of small subdivisions is collected in a number of sumps, and automatically forced by compressed air, to a central pumping station. Such a system could be advantageously applied to the whole of the bottom lands on both sides of the river within the city limits, but the immediate needs of the city appear to demand the disposal and utilization of the sewage from the elevated and rapidly growing districts, and this can be most effectively and economically accomplished by the construction of an intercepting gravity sewer recommended by the city engineer.

RESPECTFULLY SUBMITTED,

J. JAMES R. CROES,
Consulting Engineer.

IMPROVEMENT ASSOCIATION.

Programme for the Y. L. M. I. Association Conference.

Programme for the Young Ladies' Mutual Improvement Association quarterly conference of Salt Lake stake to be held in the Assembly hall Tuesday, March 7, 1893.

AFTERNOON SESSION, 2 P. M.

Opening song, "Arise My Soul Arise."

Prayer.

Singing, "Come Let Us Anew."

Miscellaneous business.

Address, "The Gospel as Taught by Jesus Christ," Miss Annie Cannon, Fourteenth Ward association.

Duet, "Misses Priscilla James and Beekie McMurrian, Eighth ward association."

Subject, "The Circulation of the Blood," Mrs. Annie Egbert, Sugar House ward association.

Solo, Mrs. Florence Dinwoodey, Seventh ward association.

Lecture, "The Guide," Mrs. M. Y. Deocal.

Remarks.

Closing hymn, "Glorious Things of Thee are Spoken."

Benediction.

EVENING SESSION, 7:30.

Opening song—"Hail to the Brightest."

Prayer.

Singing—"Guide Us, O Thou Great Jehovah."

Miscellaneous business.

Subject—"Prayer," Miss L. Hardley, Third Ward association.

Recitation—"Miss Belle Salmon, Twelfth Ward association."

Address—"The World's Fair," Mrs. Lizzie S. Cartwright.

Organ Solo—"Miss Gwendolin Lewis, Seventeenth Ward association."

Address—"The Objects and Benefits to be Derived from the National Council of Women," Mrs. E. B. Wells.

Duet—"Misses Lattie and Hannah Davis, Seventeenth Ward association."

Brief addresses.

Closing hymn—"Lord Dismiss us."

Benediction.

A cordial invitation is extended to the public and all interested to attend. Please bring your hymn books.

MARY A. FREEZE, Stake Pres.

A Common Sense Remedy.

In the matter of curatives what you want is something that will do its work while you go out and do your business that will give you no inconvenience nor interfere with your business. Such a remedy is Allcock's Porous Plasters.

These plasters are not an experiment; they have been in use for over thirty years, and their value has been attested by the highest medical authorities as well as by testimony from those who have used them. They require no change of diet and are not affected by wet or cold. Their action does not interfere with labor or business, you can toil and yet be cured while hard at work. They are so pure that the youngest, the oldest, the most delicate person of either sex can use them with great benefit.

Beware of imitations and do not be deceived by misrepresentations. Ask for Allcock's and let no solicitation or explanation induce you to accept a substitute.

There will be an important meeting of the North Salt Lake Association at the rooms of the Business Men's association, Progress building, this afternoon at 4 o'clock sharp. All members, and those desirous of joining the association, are invited to be present.

O. P. PRATT, Secretary.

FIRED IN FIVE PLACES.

An Incendiary's Attempt to Burn a Main Street Block.

KEROSENE WAS APPLIED.

Mrs. Smith Says Some One Wanted to Burn Her Out.

The Flames Were Extinguished Before Serious Damage Was Done—C. G. Brown Arrested for Obtaining Money Under False Pretenses.

A number of fires that have occurred in this city recently have been suggested by circumstances that pointed to incendiary origin, but the insurance adjusters have so far been unable to make out a case.

Yesterday afternoon, however, a bold attempt was made to fire a business block in the very heart of the city. About 3 o'clock dense volumes of smoke were seen issuing from the third floor of the three-story brick on Main street adjoining the Washach block on the south. The fire department was quickly on the spot and, according to the top floor, found five fires raging in as many different rooms. By the aid of the small chemical engine and buckets of water the flames were extinguished. They had gained considerable headway in one of the rear rooms, where a pile of bedding had been ignited.

Two front rooms, one back room and two inside rooms had been fired. The fire had evidently been started simultaneously. In each case the use of kerosene was detected. The carpets had been saturated with the fluid and several empty lamps, sitting about indicated from whence it came. In one room a hole had been punched through the plastering, kerosene poured down the interior of the partition and ignited. Had the discovery of the fire been made fifteen minutes later, the entire upper floor would have been a mass of flames.

The rooms on the upper floor were rented by a Miss Smith, and used as a lodging house. She had been in possession about a month. She carried a \$1,000 insurance policy on the building. The building is owned by Grosbeck Brothers. The Kentucky Liquor company and the Golden Rule razor company occupy on the ground floor.

MRS. SMITH'S STATEMENT.

Mrs. Smith said to a HERALD reporter last night: "Right after lunch I went out to East Waterloo to visit a friend and did not return until after 6 o'clock. Consequently I know nothing of the fire, except some one has been trying to burn me out."

"If that is true, there must be a motive. Do you know of any?"

"I have received several anonymous letters telling me to get out of town or it will be worse for me. Some enemy of mine is trying to ruin me."

"Who is the enemy?"

"I do not know."

HE PROMISED WATER.

C. G. Brown Arrested for Obtaining Money Under False Pretenses.

C. G. Brown, who does business in the Washach building, was arrested upon the charge of obtaining money under false pretenses. The complaining witness is Alice J. Taylor of Grantsville, and she alleges that the defendant obtained \$300 from her by false and fraudulent pretenses on Oct. 13, 1892. She bases her charge upon the fact that she purchased a land and water right from him, and he promised her water, which he never delivered. She alleges that he had promised her water for the same when she had proved up, when the fact is that he has not water right, and hence could not fulfill his agreement.

Brown was taken before Commissioner Martin, who fixed his bond at \$1,000 and set his preliminary hearing for next Tuesday.

Thirty Witnesses Subpoenaed.

John Rupp, the "unbridled whirlwind" from North Jordan precinct, will be tried on two charges of disturbing the peace of his wife and children, in Justice Hall's court today. Thirty witnesses have been subpoenaed and an interesting time is anticipated.

Wants to Know about Newton.

Deputy Sheriff Chase is in receipt of a letter from a resident of Salmon City, Or., inquiring as to the standing of Attorney William A. Newton. He left here rather hurriedly some months ago. It is evident from the tone of the letter that Newton has not changed for the better since his departure.

Only Four Drunks.

The work in the police court was so light yesterday, Counselor Cook threatened to resign. Four drunks were fined each, and a case against August Horngren, for keeping an unlicensed dog, dismissed.

John Doe and Mike McElroy were among the arrests for drunkenness last night.

Thomas McElroy, John Braden and Clarence E. Lee, are vagrants in the city jail, arrested last night.

FEDERAL OFFICIALS.

The Utah Commission, 137 South West Temple street.

G. L. Godfrey of Iowa, chairman.
R. S. Robertson of Indiana.
Alvin Saunders of Illinois.
J. A. McClelland of Illinois.
A. B. Williams of Arkansas.
Elijah Sells, secretary.

The Supreme Court.

Charles S. Zane—Chief justice.
James A. Minor, Ogden—Associate justice.

J. W. Blackburn, Provo—Associate justice.
George W. Barch, Salt Lake—Associate justice.

United States Marshal—I. A. Benton.

Assistant United States Attorney—Frank B. Stevens.

Governor—Arthur L. Thomas.

Secretary—Elijah Sells.

Surveyor General—E. Darggett.

Register United States Land Office—F. D. Hobbs.

Receiver United States Land Office—Roy Sherman.

United States Signal Officer—George N. Salisbury.

Bucklen's Arnica Salve.

The best salve in the world for cuts, bruises, sores, ulcers, salt rheum, fever sores, tetter, chapped hands, chilblains, corns and all skin eruptions, and positively cures piles, or no pay required. It is guaranteed to give perfect satisfaction, or money refunded. Price, 25 cents per box. For sale by A. C. Smith & Co.

DR. PRICE'S

Clean Baking Powder.

The only Pure Cream of Tartar Powder.—No Ammonia; No Alum.

Used in Millions of Homes—40 Years the Standard



Already are spring vegetables in the market, and they are moderately abundant at fair prices. New California beans are 10c per bunch, three bunches for 25c. Green beans 40c. per pound, asparagus 40c. per pound, French artichokes 10c. a flower and three for 25c.; radishes 10c. a bunch, three for 25c.; water cress 5c. a bunch, Brussels sprouts 12 1/2c. per pound, cauliflower 15c. to 20c. per pound.

There is but little fine celery in the market and the best is high, selling at 10c. a head, three for 25c.; chicken 10c. a head, three for 25c. Irish potatoes are lower and 6c. to 7 1/2c. a bushel is asked for them. Sweet potatoes are higher, selling at three pounds for 25c. New parsnips and turnips are each selling at 25c. per peck. Onions are scarce and higher, and bring 5c. per pound. Red cabbage is lower, price 7c. per pound; so, too, is white cabbage, selling for 4c. per pound. The first pie plant is in at 5c. per pound.

EGGS, BUTTER AND LARD.

The bright warm sun has sent eggs down, the price is 25c. per dozen. Next week they will be still lower. Butter is at former prices, 25c. 30c. and 35c. per pound being asked. Lard dropped a couple of days ago; the best is selling at 15c. 90c. and 1.15c. according to size of can. There will likely be another decline shortly.

GAME AND POULTRY.

Mountain hares are lower and now sell for 25c. each. Wild ducks are again in the market and sell from 40c. to 75c. per pair. Game ducks are 25c. per pound, squabs 30c. per dozen. Last week poultry was scarce but this week there is a good supply, yet prices range high, 25c. per pound is asked for chickens and from 25c. to 35c. per pound for turkeys.

FRUITS.

The market in fruits is quiet. Bananas have been scarce, but fifty bunches will arrive by express today. The price will be from 40c. to 50c. per bunch. A carload of fine New York apples will come in on Monday and retail at 3c. for 25c. The finest oranges are high, 50c. to 75c. per box, but sellings are all the way from 10c. to 50c. The highest fruit is highest. Lemons are down, 30c. per dozen, being asked. A carload of Halland oranges arrived last week and are very fine. Pine apples are scarce, with prices varying from 25c. to 50c., according to size and condition.

FISH.

Portland smelts are 12c. per lb.; sold a few days ago at 30c.; Salmon at 17 1/2c. per lb.; mountain trout (fresh and nice this morning) at 25c. per lb. Oysters are at old prices, 40c. to 50c. per can. Crabs are scarce, shrimps 20c. per qt., lobster 25c. per lb.

MISCELLANEOUS.

Flour lower, \$1 and \$1.15 a sack. Sugar 15c. per lb.

A Piece of City Scrap.

A reporter was yesterday shown a curiosity. It was one of the old city scrip \$1 bills, issued in 1883 and signed by Robert Campbell, auditor of public funds. There are probably but a few pieces of the currency in existence, although Auditor Raybould's books show \$3,005.25 outstanding. The \$1 which the reporter saw is the only one which has been redeemed since Mr. Raybould has been in office.

Inure.

In the "Hartford," Assets over \$6,000,000 H. J. GRANT & Co., Agents.

The Deseret Savings Bank.

The attention of those desiring to open savings accounts is called to the Deseret Savings bank, which allows interest on deposits at the rate of 6 per cent. per annum, compounded quarterly. Money to loan on approved real estate security. Its officers are as follows:

JAMES T. LITTLE, President,
MOSES THOMPSON, Vice-President,
E. A. SMITH, Cashier.

DIRECTORS.

JNO. R. WINDY, J. R. BARNES,
JAMES SHARP, D. H. PERRY,
MOSES THOMPSON, J. T. LITTLE,
HENRY DINWOODEY, ELIAS A. SMITH,
L. S. HILLS, W. W. RITER,
J. C. CUTLER, F. W. JENNINGS,
GEORGE ROMNEY.

Flour Is Down.

The millers of Utah having formed a Millers' association, will hold their next meeting at Logan on March 11, 1893, at 3 o'clock p. m., at the Logan Hotel. Millers from all parts of the territory are urgently asked to be present, and if not members of the association, to join at that meeting. Millers wishing to attend this meeting apply to Alexander Rogers, Salt Lake city, president of the association, for reduced rates on transportation. ALEXANDER ROGERS, President.

A White House Change.

Mrs. C. E. Podleck, lessee of the White house and owner of the furniture, has taken charge of the property and installed Mr. M. P. Germon as manager. Notice to vacate was served on Mr. Stephens by Mrs. Podleck's attorney last week, as he was in arrears with his rent.

Mr. Germon has been connected with the White house for a number of years, is popular with the public and under his management the house ought to prosper.

A Sure Cure for Piles.

Itching piles are known by moisture like perspiration, causing intense itching when warm. This form, as well as blind, bleeding or protruding, yield at once to Dr. Bosanko's Pile remedy, which acts directly on parts affected, absorbs tumors, allays itching and effects a permanent cure. 50 cents. Druggists or mail. Circulars free. Dr. Bosanko, Philadelphia, Pa. Sold by Godde Pitts Drug Co. Corner Main and First South.

Clinton, Missouri.

Mr. A. L. Armstrong, an old druggist, and a prominent citizen of this enterprising town, says: "I sell some forty different kinds of cough medicines, but have never in my experience sold so much of any one article as I have of Ballard's Horehound Syrup. All who use it say it is the most perfect remedy for cough, cold, consumption and all diseases of the throat and lungs, they have ever tried." It is a specific for croup and whooping cough, it will relieve a cough in one minute. Contains no opiates. Sold by Z. C. M. I. Drug Dept.

A Sound Laxative is Well Man.

Are you bilious, constipated or troubled with jaundice, sick headache, bad taste in the mouth, foul breath, coated tongue, dyspepsia, indigestion, hot, dry, itchy, pain in back and between the shoulders, chills and fever, etc.? If you have any of these symptoms your liver is out of order and your blood is slowly being poisoned, because your liver does not act properly. Herbine will cure any disorder of the liver, stomach or bowels. It has no equal as a liver medicine. Price, 75 cents. Free trial bottle at Z. C. M. I. drug department.

Hood's Cures



Mrs. C. B. Card
Oakland, Cal.

Made Over Anew

Chronic Headache Cured—Weak Lungs Made Strong and Well.

"For years I had sick headaches every day, and I also had very weak lungs. Since I have been taking Hood's Sarsaparilla, I have been entirely cured of headaches, and my lungs are strong and well. Friends often say—'How Well You're Looking.' I tell them it is due to Hood's Sarsaparilla. I am small in stature—never weighed over 100 pounds before taking Hood's Sarsaparilla, and at the time I began taking it I had run down to 85 pounds, but now I weigh 115. My friends thought I would be dead long ago, but I am perfectly well. I am unable to express my thanks for the good Hood's Sarsaparilla has done me." Mrs. C. B. CARD, 1215 Adeline Street, Oakland, California.

Hood's Sarsaparilla

has done me." Mrs. C. B. CARD, 1215 Adeline Street, Oakland, California.

Hood's Pills cure all Liver Ills, Biliousness, Jaundice, Indigestion, Sick Headache.

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